

REMARKS-General

1. The newly drafted independent claim 17 incorporates all structural limitations of the original claim 1 and includes further limitations previously brought forth in the disclosure. No new matter has been included. All new claims 17-24 are submitted to be of sufficient clarity and detail to enable a person of average skill in the art to make and use the instant invention, so as to be pursuant to 35 USC 112.

Response to Rejection of Claims 1-16 under 35USC103

2. The Examiner rejected claims 1-16 over Nishio et al (US 6,437,502) in view of Liyes et al (US 6,633,128), Gruzdev et al (US 3,551,742), and/or Yorifuji et al (US 6,337,539).

3. Pursuant to 35 U.S.C. 103: "(a) A patent may not be obtained though the invention is **not identically** disclosed or described as set forth in **section 102 of this title**, if the **differences** between the subject matter sought to be patented and the prior art are such that the **subject matter as a whole would have been obvious** at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made."

4. In view of 35 U.S.C. 103(a), it is apparent that to be qualified as a prior art under 35USC103(a), the prior art must be cited under 35USC102(a)~(g) but the disclosure of the prior art and the invention are not identical and there are one or more differences between the subject matter sought to be patented and the prior art. In addition, such differences between the subject matter sought to be patented **as a whole** and the prior art are obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

5. In other words, the differences between the subject matter sought to be patent as a whole of the instant invention and Nishio which is qualified as prior art of the instant invention under 35USC102 are obvious in view of Liyes, Gruzdev or Yorifuji at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

6. The applicant respectfully submits that in order to determine whether the differences between the subject matters sought to be patent as a whole of the instant invention and the primary prior art, Nishio, are obvious in view of the supplemental cited arts, Liyes, Gruzdev and/or Yorifuji, we have to identify all the differences between the claims of the instant inventions and Nishio. The applicant respectfully identifies the differences between the claims of the instant invention and Nishio as follows:

(a) In claim 17, a light tube having a spiral-shaped light body and two end portions downwardly and integrally extended therefrom" is included to form a spiral-shaped illuminable unit, wherein Nishio merely teaches, in column 12, lines 30-32, a plurality of U-shaped bent bulb 31 that each of the bulb 31 has a bent portion 31a and a pair of straight portions 31b integrally connected to the bent portion 31a. Therefore, Nishio fails to suggest any spiral-shaped light body for maximizing a lighting surface of the illuminable unit.

(b) In claim 17, "the end portions of the light tube are parallelly extended from the light body in a vertical extending manner" is claimed, wherein Nishio merely teaches the straight portions 31b extending parallel to each other that fails to suggest any end portion of the light tube. The applicant respectfully submits that the straight portion of the U-shaped bulb taught by Nishio is not equivalent to the end portion of the light tube of the instant invention. In Fig. 4 of Nishio, the length of the straight portion is substantially longer than the height of the bent portion. However, the length of the end portions of the light tube is substantially shorter than the height of the spiral-shaped light body.

In addition, the Examiner alleges that the minute tube 41 of Nishio is the end portion of the light tube of the instant invention. However, the minute tube 41, in column 14, lines 28-30, that may be called an exhaust tube is welded to the other end of each U-shaped bent bulb 31 to discharge the air. It is apparent that the minute tube 41 taught by Nishio is different from the end portion of the light tube of the instant invention.

(c) In claim 17, "the light tube has a light cavity containing a mercury source therein and filling with inert gas, and a phosphor layer coated on an inner wall of the light tube" is included to maximize the lighting surface of the light tube, wherein Nishio merely teaches each U-shaped bent bulbs 31 is provided with a phosphor film, which is

formed on the inner surface of the U-shaped bent bulb 31 and hermetically contained a rare gas that fails to suggest any phosphor layer coated on the inner wall of the spiral-shaped light body.

(d) In claim 17, "a conductor enclosure is sealed at a bottom end of the respective end portion to conceal the head portion of the conductor enclosure within the end portion of the light tube" is included to seal the light cavity in an air tight manner, wherein Nishio merely teaches the U-shaped bent tube 31 has a closed end that fails to teach any conductor enclosure sealedly mounted to the light tube.

(e) In claim 17, "a conductor enclosure has a length approximately equal to a length of the end portion of the light tube" is included to minimize the overall size of the illuminable unit because the conductor enclosure is fit into the end portion of the light tube, wherein Nishio does not itself teach the concept of providing the conductor enclosure having a length corresponding to the length of the end portion of the light tube. It is worth to mention that there is nothing inside the U-shaped bent bulb having a length equal to the length of the straight portion thereof.

(f) In claim 17, "a conductor wire is held by the conductor enclosure to coaxially extend with the respective end portion of the light tube through the conductor enclosure" is included to retain the conductor wire in position within the end portion of the light tube, wherein Nishio merely teaches, in column 14, lines 37-38, the dumet wire 46 attached to the glass at the end of the U-shaped bent bulb 31 that fails to suggest any conductor enclosure retaining the conductor wire at a position that the conductor wire is coaxially extended within the end portion of the light tube.

(g) The structure of the instant invention is totally different from that of Nishio, wherein Nishio merely teaches the arc tube formed by a plurality of U-shaped bent bulb that fails to suggest any spiral shaped light tube. One of the main objectives of the instant invention is to minimize the overall height of the illuminable unit with the spiral-shaped light tube. Nishio specifically emphasizes the spiral shaped light tube cannot be made to incorporate with the copper-weld wire 45. In order to increase the lighting surface, three U-shaped bent bulbs are combined to form the arc tube and three copper-weld wires 45 are needed to extend from the end of the three U-shaped bent bulbs respectively. Accordingly, the spiral-shaped light body maximizes the lighting

surface of the light tube while only one conductor wire is required to extend from the end portion of the light tube. Therefore, the instant invention not only enhances the brightness of the illuminable unit via the spiral-shaped light body but also minimizes the required component for electrifying the mercury source. It is worth to mention that no such conventional illuminable unit has a spiral light portion and two vertical end portions downwardly extended from the spiral light portion that the conductor enclosure is received in the end portion of the light tube to form a compact size of the illuminable unit.

(h) In claim 18, "a gas exhausting passage is integrally extended from the conductor enclosure" is claimed to communicate with the light cavity, wherein Nishio merely teaches the minute tube 41 is welded to the end of each U-shaped bent bulb 31 without any mention of any conductor enclosure having the gas exhausting passage integrally extending therefrom.

(i) "The mercury source is liquid mercury contained in the light tube" as claimed in claims 19 to 20 in addition to what is claimed in claim 17 as a whole.

(j) "The mercury source is amalgam contained in the light tube" as claimed in claims 21 to 22 in addition to what is claimed in claim 17 as a whole.

(k) "The mercury source is amalgam integral with the light tube" as claimed in claims 23 to 24 in addition to what is claimed in claim 17 as a whole.

7. Whether the claims 17 to 24 as amended of the instant invention are obvious depends on whether the above differences (a) to (k) between the instant invention and Nishio are obvious in view of Liyes, Gruzdev and/or Yorifuji al at the time of the invention was made.

8. Furthermore, the applicant respectfully submits that when applying 35 USC 103, the following tenets of patent law must be adhered to:

(a) The claimed invention must be considered as a whole;

(b) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;

(c) The references must be viewed without the benefit of hindsight vision afforded by the claimed invention; and

(d) Reasonable expectation of success is the standard with which obviousness is determined.

Also, "The mere fact that a reference could be modified to produce the patented invention would not make the modification obvious unless it is suggested by the prior art." Libbey-Owens-Ford v. BOC Group, 4 USPQ 2d 1097, 1103 (DCNJ 1987).

9. Liyes merely teaches a discharge tube having a spiral shaped tube portion and two sealed ends without any suggestion of how such discharge tube be possibly formed with two parallel end portion downwardly extended from the spiral shaped tube portion in a vertical extending manner. Similarly, neither Nishio nor Liyes suggests an illuminable unit containing the above distinctive features (a) to (k) as claimed in the instant invention as well as any combination or possibility of providing a light tube having a spiral-shaped light body and two end portions downwardly and integrally extended therefrom in a vertical extending manner.

10. Gruzdev merely teaches an electrodeless high-frequency light source comprising a quartz mount 4 soldered to the end of the quartz envelop 2 whereas an adapter 5 is glued to the end of the mount 4, the lead-out of the field coil 3 being fixed in position on the adapter 5 by means of a lock nut 6 without any suggestion of how to hold the conductor to coaxially extend within the end portion of the light tube while the conductor enclosure has a length approximately equal to a length of the end portion of the light tube.

11. Yorifuji merely teaches a low-pressure mercury vapor discharge lamp without any suggestion of how to place the liquid mercury in the spiral shaped light tube with two parallel end portions as claimed in the instant invention.

12. "To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the

cited art references for combination in the manner claimed... [T]he suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test for obviousness..." *In re Gorman*, 933 F.2d 982, 986, 18 USPQ 2d 1885, 1888 (Fed. Cir. 1991).

13. Accordingly, the applicant believes that neither Nishio, Liyes, Gruzdev nor Yorifuji, separately or in combination, suggest or make any mention whatsoever of the difference subject features (a) to (k) as claimed in the amended claims 17 to 24 of the instant invention.

14. Applicant believes that for all of the foregoing reasons, all of the claims are in condition for allowance and such action is respectfully requested.

The Cited but Non-Applied References

15. The cited but not relied upon references have been studied and are greatly appreciated, but are deemed to be less relevant than the relied upon references.

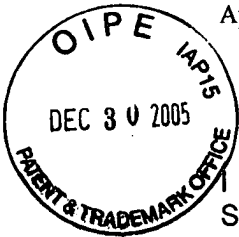
16. In view of the above, it is submitted that the claims are in condition for allowance. Reconsideration and withdrawal of the objection are requested. Allowance of claims 17-24 at an early date is solicited.

17. Should the Examiner believe that anything further is needed in order to place the application in condition for allowance, he is requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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